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Stuart G. Hibben

Informatics, Incorporated

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13. ABSTRACT

This is the Soviet Laser Bibliography for the third quarter of 1972 and is No. 9 in the series on Soviet laser developments. The coverage includes basic research on solid state, liquid and gas lasers; chemical lasers; u-v lasers; components; nonlinear optics, spectroscopy of laser materials; ultrashort pulse generation; crystal growing; and general laser theory. Laser applications are listed under biological effects; communications; computer technology; holography; instrumentation and measurement; materials processing; and plasma generation and diagnostics.

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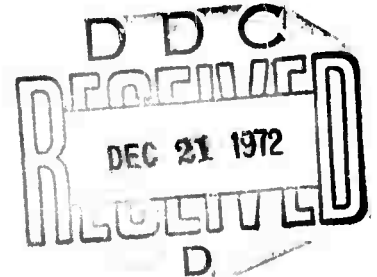
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Tb

Introduction

This bibliography has been compiled by the staff of Informatics Inc. in response to a continuing contractual assignment to monitor current Soviet-bloc developments in the quantum electronics field. Of all material reviewed, the major yield has been from the approximately 30 periodicals which are known to report the most advanced and interesting findings in Soviet laser technology.

The period covered is the third quarter of 1972, and includes all significant laser-related articles received by us during that interval. The structure and selection criteria are basically those used in the preceding reports.

For convenience we have abbreviated frequently cited source names; a source abbreviation list and an author index are included. Unless indicated by a parenthesized (RZh, LZhS) notation, all cited sources are available at Informatics Inc. The numbers in parentheses following the authors' names in the text refer to the Cumulative Affiliations List which includes all author affiliations from 1969 to the present.

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I. BASIC RESEARCH

A. SOLID STATE LASERS

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III. MONOGRAPHS

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594. Pestov, E. G., and G. M. Lapshin (0). Kvantovaya elektronika (Quantum electronics). Moskva, Voenizdat, 1972, 335 p. (LC)
595. Potekhin, A. I. (0). Izlucheniye i rasprostraneniye elektromagnitny voln v anizotropnoy srede (Radiation and propagation of electromagnetic waves in an anisotropic medium). Moskva, Nauka, 1971, 77 p.

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599. Sobolev, V. V. (0). Rasseyaniye sveta v atmosferakh planet (Light scattering in planetary atmospheres). Moskva, Nauka, 1972, 336 p. (RZhF, 8/72, no. 8D954)
600. Valitov, R. A., N. G. Kokodiy, A. V. Kubarev, V. M. Kuz'michev, A. Ya. Leykin, B. N. Morozov, and A. S. Obukhov (0). Izmereniye kharakteristik opticheskikh kvantovykh generatorov (Measurement of laser characteristics). Moskva, Izd-vo komiteta standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR, 1969, 183 p.
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IV. SOURCE ABBREVIATIONS

AiT	-	Avtomatika i telemekhanika
APP	-	Acta physica polonica
DAN ArmSSR	-	Akademiya nauk Armyanskoy SSR. Doklady
DAN AzSSR	-	Akademiya nauk Azerbaydzhanskoy SSR. Doklady
DAN BSSR	-	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	-	Akademiya nauk SSSR. Doklady
DAN TadSSR	-	Akademiya nauk Tadzhikskoy SSR. Doklady
DAN UkrSSR	-	Akademiya nauk Ukrainiskoy SSR. Dopovidi
DAN UzbSSR	-	Akademiya nauk Uzbekskoy SSR. Doklady
DBAN	-	Bulgarska akademiya na naukite. Doklady
EOM	-	Elektronnaya obrabotka materialov
FAiO	-	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	-	Fizika goreniya i vzryva
FiKhOM	-	Fizika i khimiya obrabotka materialov
F-KhMM	-	Fiziko-khimicheskaya mekhanika materialov
FMiM	-	Fizika metallov i metallovedeniye
FTP	-	Fizika i tekhnika poluprovodnikov
FTT	-	Fizika tverdogo tela
FZh	-	Fiziologicheskiy zhurnal
GiA	-	Geomagnetizm i aeronomiya
GiK	-	Geodeziya i kartografiya
IAN Arm	-	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN Az	-	Akademiya nauk Azerbaydzhanskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk

IAN B	-	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Biol	-	Akademiya nauk SSSR. Izvestiya. Seriya biologicheskaya
IAN Energ	-	Akademiya nauk SSSR. Izvestiya. Energetika i transport
IAN Est	-	Akademiya nauk Estonskoy SSR. Izvestiya. Fizika matematika
IAN Fiz	-	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Fizika zemli	-	Akademiya nauk SSSR. Izvestiya. Fizika zemli
IAN Kh	-	Akademiya nauk SSSR. Izvestiya. Seriya khimicheskaya
IAN Lat	-	Akademiya nauk Latviyskoy SSR. Izvestiya
IAN Met	-	Akademiya nauk SSSR. Izvestiya. Metally
IAN Mold	-	Akademiya nauk Moldavskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk
IAN SO SSSR	-	Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya
IAN Tadzh	-	Akademiya nauk Tadzhiksoy SSR. Izvestiya. Otdeleniye fiziko-matematicheskikh i geologo-khimicheskikh nauk
IAN TK	-	Akademiya nauk SSSR. Izvestiya. Tekhnicheskaya kibernetika
IAN Turk	-	Akademiya nauk Turkmenskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh, khimicheskikh, i geologicheskikh nauk
IAN Uzb	-	Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IBAN	-	Bulgarska akademiya na naukite. Fizicheski institut. Izvestiya na fizicheskaya institut s ANEB
I-FZh	-	Inzhenerno-fizicheskiy zhurnal

IIR	-	Izobretatel' i ratsionalizator
ILEI	-	Leningradskiy elektrotekhnicheskiy institut. Izvestiya
IT	-	Izmeritel'naya tekhnika
IVUZ Avia	-	Izvestiya vysshikh uchebnykh zavedeniy. Aviatsionnaya tekhnika
IVUZ Cher	-	Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya
IVUZ Energ	-	Izvestiya vysshikh uchebnykh zavedeniy. Energetika
IVUZ Fiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Geod	-	Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos''yemka
IVUZ Geol	-	Izvestiya vysshikh uchebnykh zavedeniy. Geologiya i razvedka
IVUZ Gorn	-	Izvestiya vysshikh uchebnykh zavedeniy. Gornyy zhurnal
IVUZ Mash	-	Izvestiya vysshikh uchebnykh zavedeniy. Mashinostroyeniye
IVUZ Priboro	-	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelektr	-	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	-	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
IVUZ Stroi	-	Izvestiya vysshikh uchebnykh zavedeniy. Stroitel'stvo i arkhitektura
KhVE	-	Khimiya vysokikh energiy
KiK	-	Kinetika i kataliz
KL	-	Knizhnaya letopis'
Kristall	-	Kristallografiya
KSpF	-	Kratkiye soobshcheniya po fizike

LZhS	-	Letopis' zhurnal'nykh statey
MiTOM	-	Metallovedeniye i termicheskaya obrabotka materialov
MP	-	Mekhanika polimerov
MTT	-	Akademiya nauk SSSR. Izvestiya. Mekhanika tverdogo tela
MZhiG	-	Akademiya nauk SSSR. Izvestiya. Mekhanika zhidkosti i gaza
NK	-	Novyye knigi
NM	-	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
NTO SSSR	-	Nauchno-tekhnicheskiye obshchestva SSSR
OiS	-	Optika i spektroskopiya
OMP	-	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	-	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PF	-	Postepy fizyki
Phys abs	-	Physics abstracts
PM	-	Prikladnaya mekhanika
PMM	-	Prikladnaya matematika i mekhanika
PSS	-	Physica status solidi
PSU	-	Pribory i sistemy upravleniya
PTE	-	Pribory i tekhnika eksperimenta
Radiotekh	-	Radiotekhnika
RiE	-	Radiotekhnika i elektronika
RZhAvtom	-	Referativnyy zhurnal. Avtomatika, telemekhanika i vychislitel'naya tekhnika
RZhElektr	-	Referativnyy zhurnal. Elektronika i yeye primeneniye

RZhF	-	Referativnyy zhurnal. Fizika
RZhFoto	-	Referativnyy zhurnal. Fotokinotekhnika
RZhGeod	-	Referativnyy zhurnal. Geodeziya i aeros"- yemka
RZhGeofiz	-	Referativnyy zhurnal. Geofizika
RZhInf	-	Referativnyy zhurnal. Informatics
RZhKh	-	Referativnyy zhurnal. Khimiya
RZhMekh	-	Referativnyy zhurnal. Mekhanika
RZhMetrolog	-	Referativnyy zhurnal. Metrologiya i izmer- itel'naya tekhnika
RZhRadiot	-	Referativnyy zhurnal. Radiotekhnika
Sb1	-	Dielektriki. Mezhdovedomstvennyy nauchnyy sbornik, no. 1, 1971
Sb2	-	Kvantovaya elektronika, Moskva, no. 2(8), 1972
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Sb4	-	10th International Conference Phenomena Ioniz. Gases, Oxford, 1971, Contrib. pap., Oxford, 1971
Sb5	-	Sb. Materialy Soveshch. po mekhanizmu ingibir. tsepn. gaz. reaktsiy, Alma-Ata, 1971
Sb6	-	Zapiski nauchnykh seminarov Leningradskogo otdeleniya Matematicheskogo instituta AN SSSR, no. 25, 1972
Sb7	-	Sb. VII Ural'skaya konferentsiya po spektroskopii 1971. Sverdlovsk, no. 3, 1971
Sb8	-	Sb. Impul'snaya fotometriya, Leningrad, Mashinostroyeniye, no. 2, 1972
Sb9	-	Sb. Materialy 2-y Vsesoyuznoy shkoly po golografii, 1970, Leningrad, 1971

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| Sb11 | - | Sb. Monokristally i tekhnika, Khar'kov, no. 5, 1971 |
| Sb12 | - | Zb. nauk robit aspirantiv. L'viv. politekhn. in-t, no. 6, 1972 |
| Sb13 | - | Sb. X Vsesoyuznaya konferentsiya po rasprostr. radiovoln. Tezisy dokladov, Moskva, Nauka, 1972 |
| Sb14 | - | Radiotekhnika, Khar'kov, Izd-vo Khar'kovskogo universiteta, no. 20, 1972 |
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| Sb17 | - | Inzhenernaya geodeziya, Kiyev, Izd-vo Budivel'nyk, no. 10, 1972 |
| Sb18 | - | Sb. Antenna, Moskva, Izd-vo Svyaz', no. 14, 1972 |
| Sb19 | - | Izvestiya Vsesoyuznogo nauchno-issledovatel'skog instituta gidrotekhniki, no. 97, 1971 |
| Sb20 | - | Sb. Teplo- i massoperenos, Minsk, v. 1, part 3, 1972 |
| Sb21 | - | Filos. probl. suchasn. prirodzn., Mizhvid. nauk. zb., no. 26, 1972 |
| Sb22 | - | Sb. Metrologiya v radioelektronike, Moskva, 1971 |
| Sb23 | - | Sb. Nauchnaya konferentsiya, Institut mekhaniki, Moskovskogo universiteta, Moskva, 22-24 May 1972. Tezisy dokladov, Moskva, 1972 |
| Sb24 | - | Sb. Voprosy obshchey i prikladnoy fiziki, Alma-Ata, Nauka, 1972 |

Sb25	-	Radiatsionnaya fizika nemetallicheskih kristallov, v. 3, part 2, 1971
Sb26	-	Sb. Issledovaniya po geomagnetizmu, aeronomii i fizike solntsa, Moskva, Nauka, no. 22, 1972
SovSciRev	-	Soviet science review
TiEKh	-	Teoreticheskaya i eksperimental'naya khimiya
TKiT	-	Tekhnika kino i televideniya
TMF	-	Teoreticheskaya i matematicheskaya fizika
Tr1	-	Fizicheskiy institut AN SSSR. Trudy, 1972
Tr2	-	Tashkentskiy universitet. Nauchnyye trudy, no. 393, 1971
Tr3	-	Moskovskiy energeticheskiy institut. Trudy, 1972
Tr4	-	Kishinevskiy universitet. Trudy po fizike poluprovodnikov, no. 3, 1971
Tr5	-	Gosudarstvennyy opticheskiy institut. Trudy, v. 40, no. 171, 1972
Tr6	-	7th International Congress of Acoustics, Budapest, 1971. Proceedings, Budapest, v. 2, 1971
Tr7	-	Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR. Trudy, no. 16, 1971
Tr8	-	Ryazanskiy radiotekhnicheskiy institut. Trudy, no. 33, 1972
Tr9	-	Yerevanskiy politekhnicheskiy institut. Sbornik nauchnykh trudov, no. 25, 1971
Tr10	-	Tsentralnyy nauchno-issledovatel'skiy institut svyazi. Sbornik nauchnykh trudov, no. 2, 1971
Tr11	-	Uchebnyye instituta svyazi. Trudy, Ministerstvo svyazi SSSR, no. 53, 1971

Tr12	-	Leningradskiy institut tochnoy mekhaniki i optiki. Sbornik nauchnykh trudov aspirantov, Leningrad, 1972
Tr13	-	Metrologicheskiye instituta SSSR. Trudy, 1972
Tr14	-	Omskiy politekhnicheskiy institut. Sbornik trudov, no. 2, 1970
Tr15	-	Konferentsiya Moskovskogo fiziko-tekhnicheskogo instituta, 1970. Seriya Aerofizicheskaya prikladnaya matematika, Moskva, 1971
TVT	-	Teplofizika vysokikh temperatur
UFN	-	Uspekhi fizicheskikh nauk
UFZh	-	Ukrainskiy fizicheskii zhurnal
UMS	-	Uсталost' metallov i splavov
UNF	-	Uspekhi nauchnoy fotografii
VAN	-	Akademiya nauk SSSR. Vestnik
VAN BSSR	-	Akademiya nauk Belorusskoy SSR. Vestnik
VAN KazSSR	-	Akademiya nauk Kazakhskoy SSR. Vestnik
VBU	-	Belorusskiy universitet. Vestnik
VDNKh SSSR	-	VDNKh SSSR. Informatsionnyy byulleten'
VLU	-	Leningradskiy universitet. Vestnik. Fizika, khimiya
VMU	-	Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
ZhETF	-	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	-	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhFKh	-	Zhurnal fizicheskoy khimii

ZhNiPfiK	-	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhNKh	-	Zhurnal neorganicheskoy khimii
ZhPK	-	Zhurnal prikladnoy khimii
ZhPMTF	-	Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki
ZhPS	-	Zhurnal prikladnoy spektroskopii
ZhTF	-	Zhurnal tekhnicheskoy fiziki
ZhVMMF	-	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki
ZL	-	Zavodskaya laboratoriya

V. CUMULATIVE AFFILIATIONS LIST

NS. Non-Soviet

0. Affiliation not shown
1. Physics Institute im. Lebedev, AN SSSR, Moscow (Fizicheskiy institut im. Lebedeva).
2. Moscow State University (Moskovskiy gosudarstvennyy universitet).
3. Institute of Physics, AN BSSR, Minsk (Institut fiziki, AN BSSR).
4. Leningrad Physical-technical Institute im. Ioffe (Fiziko-tekhnicheskiy institut im. Ioffe).
5. Institute of Physics, AN UkrSSR, Kiev (Institut fiziki, AN UkrSSR).
6. Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov, AN UkrSSR).
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11. Kazan' State University (Kazanskiy gos. universitet).
12. Leningrad State Universitet (Leningradskiy gos. universitet).
13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografiya, AN SSSR).
14. University of Friendship Among Nations im. Lumumba, Moscow (Universitet druzhby narodov im. Lumumby).
15. Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki, AN SSSR).
16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
17. Institute of Mechanical Problems, AN SSSR, Moscow (Institut problem mekhaniki, AN SSSR).

18. Institute of General and Inorganic Chemistry im. Kurnakov, AN SSSR, Moscow (Institut obshchey i neorganicheskoy khimii im. Kurnakova, AN SSSR).
19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).
20. All Union Scientific Research Institute of Physicotechnical and Electronic Measurements, Moscow (Vsesoyuznyy nauchno-issled. institut fiziko-tekhnicheskikh i elektronnykh izmereniy).
21. Acoustics Institute, AN SSSR, Moscow (Akusticheskiy institut, AN SSSR).
22. Institute of metallurgy im. Baykov, Moscow (Institut metallurgii im. Baykova).
23. Institute of Atomic Energy im. Kurchatov, Moscow (Institut atomnoy energii im. Kurchatova).
24. Moscow Higher Technical College im. Bauman (Moskovskoye vyssheye tekhnicheskoye uchilishche im. Baumana).
25. Moscow Scientific Research Institute of Instrument Manufacture (Moskovskiy nauchno-issled. institut instrumental'nogo proizvodstva).
26. Central Scientific Research Institute of the Ministry of Defense, Moscow (Tsentral'nyy nauchno-issled. institut Ministerstva oborony).
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162. Moscow State Pedagogical Institute (Moskovskiy gos pedagogicheskiy institut).
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164. Special Design Bureau for Analytical Instrument Manufacture, AN SSSR (Spetsial'noye konstruktorskoye byuro analiticheskogo priborostroyeniya AN SSSR).
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192. Belorussian Technological Institute (Belorusskiy tekhnologicheskii institut).

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